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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/694,877	10/29/2003	Kyung Ku Lee	P24396	4095
7055	7590	11/08/2005	EXAMINER	
GREENBLUM & BERNSTEIN, P.L.C. 1950 ROLAND CLARKE PLACE RESTON, VA 20191			VORTMAN, ANATOLY	
			ART UNIT	PAPER NUMBER
			2835	

DATE MAILED: 11/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	10/694,877	LEE, KYUNG KU	
	<b>Examiner</b>	<b>Art Unit</b>	
	Anatoly Vortman	2835	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 29 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-3 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-3 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |   |   |
|---|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)             | 4) <input checked="" type="checkbox"/> Interview Summary (PTO-413)          |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)    | Paper No(s)/Mail Date. <u>1105</u> .  |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____   | 6) <input type="checkbox"/> Other: _____                                    |

## DETAILED ACTION

### *Specification*

1. The abstract of the disclosure is objected to because the abstract's language is cumbersome and unclear. The abstract appears to be a literal translation from a foreign document. For example on p. 26, line 2+ is stated: "when an abnormal stat [sic] is occurred between a power source and an electrical load, and a switching mechanism for switching contacts on state or off state according to the power transferred from the actuating mechanism". The entire abstract should be reviewed in order to correct this and other similar problems. See MPEP § 608.01(b).

2. 35 U.S.C. 112, first paragraph, requires the specification to be written in "full, clear, concise, and exact terms." The specification is replete with terms, which are not clear, concise and exact. The language of the specification is cumbersome and unclear. This specification appears to be a literal translation from a foreign document and should be revised carefully in order to comply with 35 U.S.C. 112, first paragraph. Examples of some unclear, inexact or verbose terms used in the specification are: "the displacement of the horizontal movement is to small to make stably contacts open state or close state when one phase is or two phases are in deficiency." (p. 8, lines 16-19); "to provide a thermal overload relay for reducing its size" (p. 8, last two lines); "generating power when abnormal stat [sic] is occurred" (p. 9, line 11), etc.

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The entire specification should be carefully reviewed in order to correct this and other similar problems.

### ***Claim Objections***

3. Claim 1 is objected to because of the following informalities: the plural “s” is omitted for “member” in lines 15 and 16 (p. 24). Also the phrase: “a shifter positioned to be contacted one ends of the main bimetals” (p. 24, lines 19+) should be replaced with “a shifter positioned to be contacted with ends of the main bimetals” for better clarity. Additionally, the phrase “a switching mechanism for switching contacts on state or off state according to the power transferred from the actuating mechanism” (p. 24, lines 6+) should be replaced with the phrase: “a switching mechanism for switching contacts in “on” state or in “off” state, according to the power transferred from the actuating mechanism” for better clarity. The Applicant is advised to carefully review all claims in order to correct this and possible others similar informalities.

### ***Claim Rejections - 35 USC § 102***

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

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5. Claims 1-3, are rejected under 35 U.S.C. 102(b) as being clearly anticipated by US/5,901,025 to Takahashi et al., (Takahashi).

Regarding claims 1-3, Takahashi disclosed (Fig. 17, 18, and 24) a precisely identical thermal overload relay structure as claimed, including shifters (72, 73) rotatably connected via shafts (75a, 75b) to a lever (75) for transferring the force generated by the main bimetals (57) to a switching mechanism, said main bimetals (57) having the heating members (55) wound around them.

6. Alternatively, Claims 1 and 2 are rejected under 35 U.S.C. 102(a) as being anticipated by Applicant's Admitted Prior Art (AAPA).

Regarding claim 1, AAPA teaches (specification, Fig. 2, p. 1-8): a thermal overload relay comprising:

an actuating mechanism (A) for generating power when an abnormal state occurred between a power source and an electrical load; a switching mechanism (B) for switching contacts on state or off state according the power transferred from the actuating mechanism; a case (1) for receiving the actuating mechanism (A) and the switching mechanism (B);

wherein the actuating mechanism (A) including: a plurality of main bimetals (2) arranged in parallel to the bottom surface of the case (1) for being bended when the abnormal state is occurred;

a plurality of heating members (3), each of the heating members is wound around the corresponding main bimetal (2) for transferring heat occurred due to the abnormal state to the main bimetal (2);

a shifter (4a, 4b) positioned to be contacted with one ends of the main bimetals (2) in parallel to the bottom surface of the case (1) for being horizontally movable by the bending force of the main bimetals (2); and

a lever (see specification, p. 3, line 16 and p. 4, line 5) connected to the shifter (4a, 4b) for transferring movement force from the shifter (4a, 4b) to the switching mechanism (B).

Regarding claim 2, AAPA teaches (Fig. 2) that the shifter (4a, 4b) comprising an upper shifter (4a) and a lower shifter (4b) so that they are positioned on a vertical plane, each shifter is arranged substantially perpendicular to the main bimetal (2), and parallel to the bottom surface of the case (1).

### ***Claim Rejections - 35 USC § 103***

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Alternatively, Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over AAPA in view of US/5901025 to Takahashi et al., (Takahashi).

AAPA teaches all and further that the lever is rotatably connected to the shifters (see specification, p. 4, lines 1 and 2), but did not specifically teaches that shafts are used to accomplish said rotatable connections.

Takahashi teaches an analogous actuating mechanism (Fig. 17 and 24), having a lever (75) being rotatably connected via shafts (75a, 75b) to the shifters (72, 73).

Since the teachings of AAPA and of Takahashi are from the same field of endeavor, the purpose of shafts disclosed by Takahashi would be recognized in the structure of AAPA.

It would have been obvious to a person of ordinary skill in the switch art at the time the invention was made to use shafts as taught by Takahashi in order to accomplish rotatable connections of AAPA in order to provide reliable connections with minimal frictional resistance.

### *Conclusion*

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure:

US/4635020, 5054754, 5901025, 6512434, 6621403, and JP/09-63449 disclosed switching mechanisms for circuit breakers.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anatoly Vortman whose telephone number is 571-272-2047. The examiner can normally be reached on Monday-Friday, between 10:00 am and 6:30 pm..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ms. Lynn Feild can be reached on 571-272-2092. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AV

A handwritten signature in black ink, appearing to read 'A. Vortman', with a long horizontal flourish extending to the right.

Anatoly Vortman  
Primary Examiner  
Art Unit 2835